IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: **Phillips et al.**	Atty Docket No.: **78384 18-32 US DIV1**
Serial No. **10/706,142**	Art Unit: **1732**
Filing Date: **November 12, 2003**	Examiner: **Mathieu D. Vargot**
Confirmation No. **6069**	
For: **Methods for Forming Security Articles Having Diffractive Surfaces and Color Shifting Backgrounds**	

DECLARATION UNDER 37 CFR 1.132

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
U.S.A.

Sir:

City of Burke
State of Virginia,

I, Garth Zambory declare that all statements made of my own knowledge are true, and that all statements made on information and belief are believed to be true:

I, Garth Zambory reside at 9402 Cleat Court in Burke, Virginia.

I graduated from the University of Waterloo located in Waterloo, Ontario, Canada in 1981 with an Honors Bachelor of Mathematics.

Work History: I am currently employed by JDSU, Flex Products Group. Prior to working for JDSU I was employed for 3 years at Digimarc Corporation and prior to that I was employed at De La Rue for 6 years, including my time with Currency Systems International that was acquired by De La Rue during my employment.

I am a person skilled in the art of thin film optical structures such as those claimed in U.S. patent application 10/706,142 referred to hereafter as the '142 application.

I have reviewed the prosecution history of U.S. patent application 10/706,142 including the prior art reference United States Patent 5,700,550 in the name of Uyama et al., entitled Transparent Hologram Seal, referred to hereafter as the '550 patent.

I have compared the structure defined in the pending claims of the '142 application with the teachings found within the cited '550 patent and I conclude that the claimed invention is not described in U.S. patent 5,700,550.

Claim 1 of the '142 patent application clearly recites a method of forming two structures on opposite sides of a light transmissive substrate; a hologram or grating on one side and a color shifting structure on a second side.

There is no suggestion in the '550 patent to a method of forming a color shifting structure and hologram on opposite sides of a light transmissive substrate. In fact, the '550 patent is instructive of having a color shifting structure and hologram on a same side of a light transmissive substrate.

Furthermore, the claimed structure formed by the method in the pending '142 application would inherently produce significantly different visual effects than the structure taught in the '550 patent. With regard to the claimed invention in the '142 application, the light transmissive substrate inherently serves as a "decoupling layer" to substantially separate the holographic effects from the color shifting effects, whereas the holographic effects and color shifting effects in the prior art will always occur together simultaneously. This can be seen from the samples of Exhibit A.

Exhibit A includes a first group of images 1A, 1B, 2A, 2B made using a multilayer optically variable coating wherein the coating is deposited on the same side of the substrate as the hologram in images 1A and 2A and the opposite side of the substrate as the hologram in images 1B and 2B. Exhibit A also includes a second group of samples 3A, 3B, 4A, and 4B made using different coating layers than were used in the first group of images. As with the first group of images the coating is deposited on each side of the substrate from the hologram. (Images 3A and 4A have the coating and hologram on the same side of the substrate while images 3B and 4B have the majority of the coating layers on the opposite side of the substrate than the hologram.

I have carefully examined all of the images in Exhibit A and conclude that there is a significant visible difference between the samples 1A and 1B, 2A and 2B, 3A and 3B, and 4A and 4B.

There are advantages why one might want to have the coating and the hologram on different sides of a light transmissive substrate as shown in 1B, 2B, 3B, and 4B, rather than on the same side of the light transmissive substrate.

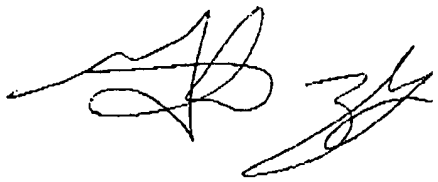
For example in the image of a wine glass in 1B, (sample 1315-1393), made with the color shifting coating and hologram on opposite sides of the substrate, there

are angles of view where only the thin film color is seen. In particular, there is a gold color at angle where no diffraction in seen. This provides a particular form of security not found in the type of structure wherein the color shifting layers and hologram are on the same side, in that the device flips from a diffractive image to only a thin film image (due to decoupling).

In contrast, in sample 1A where the hologram and color shifting layers are on a same side of the substrate always has a diffractive/thin film combination image present at all angles.

From my experience the samples in the second group where the hologram and color shifting coating are on opposite sides of the substrate are easier to manufacture in a vacuum roll coater because one is focusing a monitor off a flat surface rather than a diffractive surface.

The image in Fig. 1B, according to the structure defined in the claims of this instant application has an image that is more muted than that of Fig. 1A, made by having the hologram and color shifting layers on the same side. From my experience, more muted images are more difficult to simulate. That is why pastel colors are often used on banknotes and other high security documents. Color printers and other devices like cameras and related output devices have a harder time to accurately replicate a muted color over a highly bright, high chroma sample. Thus, sample 1B is more difficult to simulate than the image 1A.



Signed at Burke, VA, USA this 25th day of September, 2006.